CHAPTER 1: SUMMARY

1.1 OVERVIEW

1.1.1 Introduction

BP West Coast Products, LLC (BP or the Applicant) proposes to construct and operate a nominal 720-megawatt (MW), natural-gas-fired, combined-cycle cogeneration facility next to the existing BP Cherry Point Refinery in Whatcom County, Washington. The Applicant also owns and operates the refinery, but the cogeneration facility and the refinery would be operated as separate business units.

The cogeneration facility and its ancillary infrastructure would provide steam and 85 MW of electricity to meet the operating needs of the refinery and 635 MW of electrical power for local and regional consumption. The proposed cogeneration facility would be located between Ferndale and Blaine in northwestern Whatcom County, Washington (see Figure 1-1). The Canadian border is approximately 8 miles north of the proposed project site.

The Washington State Energy Facility Site Evaluation Council (EFSEC) has jurisdiction over the evaluation of major energy facilities including the proposed project. As such, EFSEC will recommend approval or denial of the proposed cogeneration facility to the governor of Washington after completing its review of this project.

On June 3, 2002, the Applicant filed an Application for Site Certification (ASC No. 2002-01) with EFSEC in accordance with Washington Administrative Code (WAC) 463-42. On April 22, 2003, the Applicant submitted an amended ASC that included, among other things, a change from air to water cooling.

In accordance with the State Environmental Policy Act (SEPA) and EFSEC SEPA rules (WAC 463-47), EFSEC is evaluating the siting of the proposed project and conducting an environmental review with this Environmental Impact Statement (EIS). Because the proposed project also requires federal agency approvals and permits, this EIS is intended to meet the requirements under both SEPA and the National Environmental Policy Act (NEPA). The Bonneville Power Administration (Bonneville) will use this EIS as part of its decision-making process associated with the Applicant's request to interconnect to Bonneville's transmission system. The U.S. Army Corps of Engineers (Corps) will also use this EIS as part of its decision-making process regarding the Clean Water Act Section 404 individual permit associated with the proposed location of the project within wetland areas.

The EIS addresses direct, indirect, and cumulative impacts of the proposed project, and potential mitigation measures proposed by the Applicant as well as measures recommended by responsible agencies.

Figure 1-1:

The Draft EIS for the BP Cherry Point Cogeneration Project was issued on September 5, 2003. The comment period for the Draft EIS ended on October 27, 2003. A public hearing was held on October 1, 2003 in Blaine, Washington.

During the comment period, EFSEC and Bonneville received comments from agencies, citizens, and interest groups. Comments were submitted in letters and e-mails, and given orally at the public hearing. The comments and responses are presented in Volume 2 of this Final EIS.

1.1.2 Project Changes Since Draft EIS Publication

The Final EIS updates the information that was presented in the Draft EIS. Chapters 1, 2, and 3 of this document present updates to the Draft EIS text, tables, and figures.

Refinements to the project design that have occurred since publication of the Draft EIS are summarized below.

- Revisions and design refinements have been made to certain features of the facility, including transformers, substations, water treatment facilities, pipelines, and storage tanks.
- Unresolved issues regarding construction, ownership, and operation of certain portions of the project, such as the switchyard, transmission line, natural gas supply line, and water supply line, have been decided.
- Elements of the wetland mitigation plan have been revised in response to comments from the U.S. Army Corps of Engineers.

1.1.3 Updated Environmental Information Since Draft EIS Publication

Environmental information obtained since publication of the Draft EIS is summarized below.

- Information on traffic, wildlife, aquatic resources, and seismic hazards has been refined based on testimony presented to EFSEC through the adjudicative proceeding held pursuant to Washington State statute.
- The wetland mitigation plan has been revised.
- The 404 (B) (1) alternatives analysis has been revised.

1.2 PURPOSE AND NEED FOR THE PROJECT

The proposed project has two purposes. First, it would provide the BP Cherry Point Refinery with reliable and affordable steam and electrical energy to maintain cost-effective operations. Second, it would provide electrical energy to the northwest power grid, which is needed to meet the projected growing regional demands for electricity.

1.2.1 BP Cherry Point Refinery Need

Steam is generated throughout the refinery, primarily by gas-fired utility boilers, but as a byproduct of a number of refinery processes. The more than 30-year-old boilers are used to increase or decrease steam supply volume and to maintain steam pressure as needed for various

refinery operations. The proposed project could produce steam for the refinery more efficiently, cheaper, and with less emissions than the existing three utility boilers. With the proposed project, the refinery would be able to shut down the older boilers, thereby reducing air emissions from the refinery.

Two economic incentives exist for the Applicant to remove the three older refinery boilers. The first is to operate the cogeneration project at peak efficiency in cogeneration mode, thereby producing power at lower cost. The second is to use steam in the refinery that has been more cost-effectively produced by the cogeneration facility.

The cogeneration facility would be designed to operate at maximum efficiency at normal baseload conditions, which include a nominal 510,000 pounds per hour of steam being exported to the refinery. Although the steam turbine would have an operating range, it would be designed for a specific operating point for peak efficiency based on the normal expected baseload operating conditions, which include steam export to the refinery. The second incentive for the Applicant is to operate the cogeneration facility in cogeneration mode to lower the cost of producing power. Cogeneration uses waste heat more efficiently and therefore produces power using less fuel and at a lower cost than a similar facility in non-cogeneration mode.

The refinery currently produces steam for use in its petroleum product processing operations through two processes: waste heat recovery and the use of utility steam boilers. Steam produced through waste heat recovery depends on the level of refinery operation, with greater amounts of steam being produced when the refinery process unit rate is high. However, the amount of steam needed by the refinery is well in excess of the steam produced by waste heat recovery alone; the utility boilers are operated to make up the difference. The operation of the utility boilers is increased or decreased according to the overall level of operation of the refinery. The older utility boilers were installed during the refinery's original construction in 1971 and currently operate at about 83% efficiency. Economic incentive exists for the Applicant to accept as much cogeneration project steam as the refinery can use because the cost of the steam would be lower if produced at almost 100% efficiency by the cogeneration project. (One hundred percent efficiency reflects the fact that the steam is actually waste heat from the steam turbine and would otherwise need to be dissipated.) This incentive is reduced if the refinery accepts less than the cogeneration steam baseload (BP 2002).

Refinery operations require approximately 85 MW of electricity. Future facilities that create cleaner fuel products could increase this demand by about 5 MW. Historically, the refinery has relied on electricity purchased from third parties. This reliance on third-party sources has exposed the refinery to cost volatility in the electricity markets. High prices for electricity in late 2000 and early 2001 placed the viability of the refinery at risk. While the volatility has decreased significantly, the projected growth in regional power needs and the volatility in hydropower will require new power generation to balance supply and demand.

1.2.2 National and Regional Power Need

Recent national and regional forecasts predict increasing consumption of electrical energy will continue into the foreseeable future, requiring development of new generation resources to satisfy the increasing demand. The Energy Information Administration published a national forecast of electrical power through the year 2025. In it, the administration projected that total electricity demand would grow between 1.8 and 1.9% per year from 2001 through 2025. Rapid growth in electricity use for computers, office equipment, and a variety of electrical appliances in the residential and commercial sectors is only partially offset by improved efficiency in these electrical applications. Power generation from natural gas, coal, nuclear, and renewable fuels is projected to increase through 2025 to meet the growing demand for electricity and offset the projected retirement of existing generation facilities (U.S. Energy Information Administration 2003).

The Western Electricity Coordinating Council (WECC) forecasts electricity demand in the western United States. According to WECC's most recent coordination plan, the 2001-2011 summer peak demand requirement is predicted to increase at a compound rate of 2.5% per year (WECC 2002).

Based on data published by the Northwest Power and Conservation Council (NWPCC), electricity demand for its four-state Pacific Northwest planning region (Washington, Oregon, Idaho, and Montana) was 20,080 average megawatts in 2000 (NWPCC 2003).

As shown in Table 1-1, the NWPCC's recently revised 20-year demand forecast projects that electricity demand in the region will grow from 20,080 average megawatts in 2000 to 25,423 average megawatts by 2025 (medium forecast), an average annual growth rate of just less than 1% per year. While the NWPCC's forecast indicates that the most likely range of demand growth (between the medium-low and medium-high forecasts) is between 0.4 and 1.50% per year, the low to high forecast range used by the NWPCC recognizes that growth as low as -0.5% per year, or as high as 2.4% per year, is possible although relatively unlikely (NWPCC 2003).

Table 1-1: Projected Pacific Northwest Electricity Demand, 2000-2025

Forecast Scenario	Electricity Demand (Average Megawatts)			Growth Rates (Percent Change)	
	2000	2015	2025	2000-2015	2000-2025
Low	20,080	17,489	17,822	-0.92	-0.48
Medium Low	20,080	19,942	21,934	-0.05	0.35
Medium	20,080	22,105	25,423	0.64	0.95
Medium High	20,080	24,200	29,138	1.25	1.50
High	20,080	27,687	35,897	2.16	2.35

Source: NWPCC 2003

Generated power typically requires interconnection with a high-voltage electrical transmission system for delivery to purchasing retail utilities. Bonneville owns and operates the Federal Columbia River Transmission System (FCRTS), comprising more than three-fourths of the high-voltage transmission grid in the Pacific Northwest. Bonneville operates the FCRTS in part to

integrate and transmit "electric power from existing or additional Federal or non-Federal generating units" (16 USC 838b). Interconnection with the FCRTS is essential to deliver power from many generating facilities to loads both within and outside the Pacific Northwest. The Applicant has asked to integrate power from the proposed project into the FCRTS.

In summary, electrical consumers served by the Northwest Power Pool and in other western states need increased power production to serve the predicted long-term increasing demand and high-voltage transmission lines to deliver the power.

Since the Draft EIS was published, new forecasts of energy supply and demand have been prepared. These new forecasts are discussed in Section 3.8 Energy in Volume 1, and Letter 17, Response 1(1) and Letter 23, Response 5 in Volume 2 of this Final EIS.

1.3 DECISIONS TO BE MADE

This document is a joint SEPA/NEPA Final EIS intended to meet the environmental review needs of EFSEC, Bonneville, and the Corps. EFSEC has jurisdiction over all of the evaluation and licensing steps for siting major energy facilities in the state of Washington. EFSEC's Site Certification Agreement acts as an umbrella authorization that incorporates the requirements of all state and local laws and regulations. EFSEC will jointly issue the Final EIS with Bonneville.

EFSEC will make a recommendation to the governor of Washington to approve or deny the proposed project. Bonneville will use the Final EIS to meet NEPA requirements and will prepare a Record of Decision for the proposed project. If the governor approves the project, Bonneville will need to decide whether and how to provide transmission interconnection and service to and from the proposed project.

Bonneville intends to base its comparison of project alternatives and its final decision on the following criteria:

- Provide an adequate, economical, efficient, and reliable transmission system for the Pacific Northwest;
- Follow Bonneville's Open Access Transmission Tariff for non-discriminatory access;
- Comply with applicable federal environmental and energy laws and policies;
- Achieve cost and administrative efficiency; and
- Minimize impacts on the natural and human environment through site selection and transmission line design.

A list of permits and requirements for the proposed project is included in Chapter 2, Table 2-6 of the Draft EIS.

The Corps will use the Final EIS, in part, to meet NEPA requirements and will prepare a Record of Decision for a Clean Water Act Section 404 permit for the proposed project. The Corps has indicated, however, that additional information on alternatives analyses and any wetland impacts associated with water pipeline improvements between the Alcoa Intalco Works facility and the cogeneration facility or upgrades to the Bonneville Custer-Intalco Transmission Line No. 2 will

be required before the final Record of Decision can be completed. If the governor approves the project, the Corps will need to decide whether or not to issue the Section 404 individual permit, based in part on the impacts, proposed mitigation measures, and information contained in Appendix A of this Final EIS (Revised 404 [B] [1] Alternative Analysis) and Appendix C (Final Cogeneration Project Compensatory Mitigation Plan).

1.4 DESCRIPTION OF ALTERNATIVES

1.4.1 Proposed Action

The proposed project includes a cogeneration facility and ancillary facilities that would be located on an approximately 265-acre site. The cogeneration facility would be designed, constructed, and operated as a stand-alone facility that would have a number of systems integrated with the facilities and operations of the BP Cherry Point Refinery.

The cogeneration facility would occupy approximately 33 acres of Applicant-owned, unimproved property, which is zoned Heavy Impact Industrial. The 230-kilovolt (kV) transmission line, which would link to the Bonneville transmission line, would include approximately 15 acres of transmission right-of-way, and the proposed construction laydown areas would include an additional 36 acres of land. Wetland mitigation sites proposed for the project north of Grandview Road would occupy approximately 110 acres. Improvements to the Bonneville transmission line corridor would encompass about 71 acres.

Whatcom County Public Utility District No. 1 (PUD) would supply industrial water to the facility under a new contract between the Applicant and the PUD. Electrical transmission towers and lines from the cogeneration facility to the Bonneville electrical transmission system would be on Applicant-owned land. Natural gas would be supplied to the cogeneration facility from either the Arco Western Natural Gas Pipeline (Ferndale pipeline), which runs through Applicant-owned land. If additional gas is needed during periods of peak refinery demand, Cascade Natural Gas would provide supplemental gas to the project. The onsite stormwater detention pond would be within the boundary of the cogeneration facility. A second stormwater detention pond would be adjacent to the western boundary of Laydown Area 2. Sanitary wastewater would be sent to the refinery and then to the Birch Bay Wastewater Treatment District Plant for treatment and discharge to Birch Bay. Wastewater from the cogeneration facility would be sent to the refinery for treatment and discharge at the refinery's Outfall 001 at the existing marine pier in the Strait of Georgia.

In this EIS, individual systems and/or components of the proposed project have been grouped into five major project elements to facilitate the analysis and discussion of potential environmental impacts associated with the proposal. The components of each major project element are briefly listed below.

Project facilities that would be constructed or installed within the boundary of the cogeneration plant are collectively referred to as the "cogeneration facility," and include:

- A steam turbine generator;
- Three combustion gas turbine generators;
- Three heat recovery steam generators (HRSGs);
- Three HRSG exhaust stacks;
- 230-kV switchyard;
- Three 185 million volt amp (MVA) step-up transformers;
- 275-MVA step-up transformer;
- Emergency diesel generator;
- 265-hp diesel-driven emergency fire suppression water or "firewater" pump;
- Evaporative cooling tower;
- Boiler water treatment facilities;
- Various holding, storage, and transfer tanks and sumps;
- Stormwater collection, detention, and treatment facilities;
- Administration, control, and warehouse building complex;
- Perimeter security fence and gates; and
- Primary access road (Access Road 1).

Project facilities that would be constructed or installed in the BP Cherry Point Refinery to support integration and operation of the cogeneration facility are referred to as "refinery interface," and include the following:

- Steam and condensate system connections and associated piping;
- Natural gas supply connection and associated piping;
- Natural gas compressor station;
- Industrial water supply connection and associated piping;
- Potable water supply connection and associated piping;
- Industrial wastewater connection and associated piping;
- Sanitary wastewater connection and associated piping;
- Elevated piperack assembly for supporting pipes connecting the two facilities;
- An intermediate voltage (69 kV or 115 kV) electrical distribution substation;
- Electrical distribution transformers;
- Stormwater collection, detention, and treatment facilities;
- Laydown Areas 1, 2, and 3; and
- Connecting east-west access road (Access Road 2).

A new 230-kV double circuit electrical transmission line would be installed to connect the cogeneration facility with the existing Bonneville transmission system approximately 0.8 mile to the east. Throughout the EIS, this line is referred to as the "transmission system."

Bonneville has determined that modifications to the Custer-Intalco portion of the existing Bonneville transmission system would be required to accommodate connection of the cogeneration facility. Two options have been identified to provide the required modifications. Option 1 is to install a Remedial Action Scheme (RAS). A RAS would install additional electrical equipment within the Custer and Intalco substations, and would require an operating agreement between the Applicant, Alcoa Intalco Works, and Bonneville for load-reduction protocols to be implemented under certain conditions. Option 2 is to reconstruct the Custer-

Intalco Transmission Line No. 2 between the Custer substation and the point of interconnection with the transmission system, a distance of approximately 5 miles. Reconstruction of the transmission line would involve installation of a second transmission line and replacement of existing towers between the interconnection point and the Custer substation. Under this option, steel monopole double-circuit transmission towers would be installed (see Figure 1-2). For purposes of this EIS, the element of the project dealing with modification of the Custer-Intalco portion of the Bonneville transmission system is referred to as "Custer-Intalco Transmission Line No. 2."

Other elements of the project that would be constructed or installed in other locations as part of the project are referred to as "other project components," and include:

- Water supply connections, equipment, and piping to be installed at the Alcoa Intalco Works facility;
- Construction Laydown Area 4 (located northeast of the cogeneration facility site);
- Compensatory Mitigation Areas (CMAs) 1 and 2 (immediately north of Grandview Road); and
- A southern cogeneration facility access road (Access Road 3).

Figure 1-3 shows the relationship of project elements between the cogeneration facility, refinery, and supporting infrastructure. Chapter 2 contains a complete description of the systems and/or components of the proposed project.

Alternatives Considered but Rejected

Alternative Sites

In addition to the proposed cogeneration facility site, five other potential sites on the Applicant's property were evaluated for the facility location. They are as follows:

- East of Blaine Road and north of Brown Road adjacent to an existing cooling tower.
- Within the Cherry Point Refinery boundary fence near refinery components.
- Immediately north of Grandview Road. This area was evaluated because it contains a moderately sized upland area adjacent to Grandview Road.
- Within the refinery boundary just south of Grandview Road and west of Blaine Road. This site currently has a contractor parking lot and open areas.
- East of Blaine Road and south of Brown Road.

Locations outside refinery-owned property were not evaluated because the primary purpose of the proposed project is to supply reliable, stable, and cost-efficient electricity and steam to the refinery.

Alternative technologies and cooling systems also were considered; a list of those considered but rejected is shown below. The reasons for their rejection are described in more detail in Chapter 2.

Figure 1-2:

Figure 1-3:

Alternative Power Generation

The Applicant's evaluation of alternative power generation technologies was limited to those that could produce both steam and electricity.

- Stand-alone combined cycle
- Conventional boiler and steam turbine
- Fluidized bed combustion and steam turbine
- Other technologies such as geothermal, hydroelectric, biomass fuels, solar and wind, and coal and heavy fuel oil.
- "Refinery Load Only" Alternative

Stand-Alone Combined Cycle

This technology integrates natural-gas-burning combustion turbines and steam turbines to achieve higher efficiencies. Because of its high efficiency and superior environmental performance, combined-cycle technology is an integral part of the proposed cogeneration project. The stand-alone combined-cycle facility, however, is less efficient than a cogeneration facility and would not produce steam for use at the refinery.

Conventional Boiler and Steam Turbine

This technology burns fossil fuel (gas, oil, coal, etc.) in a conventional boiler, creating steam to drive a steam turbine generator. A fluidant such as limestone is added to the fluidized bed to capture *in-situ* sulfur oxides produced during the combustion process. Because of the relatively low thermal efficiency, high emissions, and high capital and operating costs, the Applicant eliminated the conventional boiler and steam turbine technology from consideration for the proposed project.

Fluidized Bed Combustion and Steam Turbine

Fluidized bed combustion is an alternative to the conventional boiler for creating steam, especially while burning high sulfur-bearing, difficult-to-burn fuels. Because of the environmental concerns with solid waste disposal, higher emissions, and low thermal efficiency, the Applicant eliminated the fluidized bed combustion technology from consideration.

Other Technologies

The Applicant eliminated technologies based on fuels other than natural gas because they would not have the environmental and operational advantages of natural gas. The Applicant selected natural gas technology based on its availability and the environmental and operational advantages for the proposed cogeneration project.

"Refinery Load Only" Alternative

The Applicant examined a number of alternative facility configurations for the cogeneration project, including a facility that would generate only enough electricity to meet the operating needs of the refinery (approximately 85 MW) and would therefore not require interconnection with Bonneville's power transmission facilities.

Potential facility configurations were evaluated against a set of performance requirements that the Applicant established for the project. These considerations included:

- Steam supply reliability to the refinery;
- Flexibility to accommodate larger future steam demands; and
- Economy of scale to provide suitable capital risk.

The Applicant determined that an 85-MW facility would not provide suitable steam reliability, lacked the ability to accommodate increases in future steam demand, and had a higher capital risk profile than the proposed configuration. The "Refinery Load Only" Alternative was therefore eliminated from further consideration.

Alternative Cooling Systems

- Dry cooling system: air cooled condenser
- Wet/dry cooling system: evaporative wet/dry cooling tower
- Wet/dry cooling: hybrid cooling system

Alternative Air Emission Controls

- SCONOx
- XONON

Alternative Wastewater Disposal Methods

- Refinery industrial wastewater treatment system
- New wastewater treatment facilities
- Zero discharge facility

Alternative Electrical Interconnection

- Reconductoring Custer-Intalco Transmission Line No. 2

1.4.2 No Action Alternative

Under the No Action Alternative, the proposed cogeneration facility and ancillary infrastructure would not be constructed and existing utility boilers at the refinery would remain in operation. The refinery would continue to purchase electricity, use onsite turbines to generate electrical power needed for refinery operations, or use electricity produced by other new sources of

generation or through regional user-side electricity efficiency savings. If other natural-gas-fired plants were built to meet regional electric demand, they likely would not be cogeneration facilities and would produce energy less efficiently than the project. These other facilities also would likely have higher criteria pollutant and greenhouse gas emissions per kilowatt-hour than the proposed project. Finally, emission reductions associated with removal of the BP Cherry Point Refinery boilers would not be realized.

Under the No Action Alternative, the Applicant has no immediate plans to use the area proposed for the project site, but because the site is zoned Heavy Impact Industrial, it could be used for other future industrial development. Under this alternative, the impacts described for the proposed action would not occur. Approximately 110 acres of wetlands would not be enhanced, and if the Alcoa Intalco Works remained closed, the current withdrawal of approximately 2,200 gallons per minute (gpm) of water from the Nooksack River would not occur. Finally, without an additional and redundant electrical power supply, the refinery would continue to be subject to market energy prices.

The refinery's demand for both steam and electrical power is expected to grow in the future as other projects are implemented within the refinery. Although the refinery boilers would continue to operate, additional heat generation capability would be required, and this likely would be produced by new boilers and/or fired heaters.

A list of potential impacts and mitigation measures of the Proposed Action Alternative and the No Action Alternative is shown in Table 1-2.

1.5 PUBLIC INVOLVEMENT, CONSULTATION, AND COORDINATION

The Applicant has been communicating and meeting with agencies, Indian tribes, the public, and non-governmental organizations throughout development of the proposed project. EFSEC and Bonneville have conducted joint public comment and scoping meetings. The first public meeting was held on May 2, 2001 in the Blaine High School Center for the Performing Arts in Blaine, Washington. Prior to this meeting, public notices were mailed to local and regional newspapers, and press releases were issued to local and regional radio stations and newspapers. From May 2001 through 2003, meetings were held with local and state public agencies and committees, and agencies and regional committees of Canada. Formal meetings to inform stakeholders and solicit comments with these entities are listed in Chapter 2, Table 2-7. As noted above, a public comment hearing on the Draft EIS was held on October 1, 2003 in Blaine, Washington. EFSEC received additional public comment through adjudicative and land use hearings. Public comment was also received by the Corps of Engineers for a 404 Individual Permit, and by EFSEC for a 401 Water Quality Certification, a Prevention of Significant Deterioration/Notice of Construction Permit, a State Waste Discharge Permit, and a National Pollutant Discharge Elimination System Permit. Also, project documents have been available to the public on the EFSEC and Bonneville Web sites and in local libraries.

1.6 ISSUES TO BE RESOLVED

Several unresolved issues were identified in the Draft EIS. All of these issues, except for one, have been resolved, as indicated below.

1.6.1 Interconnection of the Cogeneration Project

The Applicant has asked Bonneville to provide an electrical connection with the Federal Columbia River Transmission System. The proposed point of interconnection is along one of Bonneville's existing 230-kV transmission lines between the Custer substation and Intalco substation (Custer-Intalco Transmission Line No. 2) near Brown Road. Preliminary transmission system studies indicate that to ensure reliable operation of the transmission system, integration of the project would require construction of an additional 230-kV circuit from the point of interconnection to Custer substation. The most feasible method of adding the new line appears to be replacing the existing 230-kV single-circuit Custer-Intalco Transmission Line No. 2 with a double-circuit line.

Alternatively, transmission system studies indicate that the new circuit might not be needed if agreement (a RAS) can be reached with the Alcoa Intalco Aluminum Corporation to interrupt electrical service at the Alcoa Intalco Works under certain potential transmission system overloads.

However, uncertainty remains about continuing operation of the Alcoa Intalco Works. Extended loss of load at the aluminum smelter could present other problems for operation of the transmission system. Also, there is uncertainty about whether and when other electrical generation projects planned in northwest Washington would be constructed and how that would affect transmission system operations. Bonneville continues to study how the proposed project, under this complex set of scenarios, would affect interconnected system operations.

1.6.2 Firm Transmission Service from the Cherry Point Cogeneration Project

The Applicant has asked Bonneville to provide firm, guaranteed transmission service from the point of interconnection to the Northwest Hub (Central Washington) and John Day substation. Bonneville has resolved most of the uncertainty about existing available transmission capacity to serve the Applicant's request.

1.6.3 Natural Gas Supply

The Applicant has entered into an agreement to purchase natural gas for the proposed cogeneration project. The gas would be transmitted via the existing Ferndale Pipeline to the new cogeneration facility and the refinery. If additional gas is needed during periods of peak refinery demand, Cascade Natural Gas would provide and transport supplemental gas to the project through the existing pipeline.

1.6.4 BP Refinery NPDES Permit Changes

The BP Cherry Point Refinery's existing National Pollutant Discharge Elimination System (NPDES) permit will require revision to allow the refinery to accept industrial wastewater discharge from the cogeneration facility. Ecology, the agency with jurisdiction over this permit, would address water quality issues that have been raised for the cogeneration project such as impacts of increased salinity and temperature on the herring population, the age and condition of the existing diffuser, and potential cumulative impacts on water quality through this refinery NPDES permit revision process.

1.6.5 Water Use

Letters of intent have been signed by the Applicant, Alcoa and Whatcom PUD to effectuate the contract water right purchases between the three entities that would allow the cogeneration facility to purchase water from the PUD regardless of whether the Alcoa Intalco Works aluminum smelter is operating or not. It is anticipated that agreements to purchase the contract water rights by the cogeneration facility would become final should all state and federal approvals be received.

1.6.6 Prevention of Significant Deterioration Permit and Best Available Control Technology

The Applicant's projected air emissions and selection of the Best Available Control Technology (BACT) are currently under review by EFSEC and the U.S. Environmental Protection Agency (EPA). It is anticipated that final permit requirements would be based on emission controls and BACT no less stringent than those presented in this Final EIS.

1.6.7 Change of Ownership of Cogeneration Project

The Applicant had informed the Council that TransCanada is negotiating purchase of the cogeneration project. The Applicant has addressed how change of ownership would affect the greenhouse mitigation options offered by the Applicant through a Settlement Agreement entered into with the Counsel for the Environment

1.6.8 Project Design Features

For some project components, the Draft EIS identified that additional project design and related information would be required to complete the environmental review process for the proposed project. Specific areas where additional information is required are listed below.

Since issuance of the Draft EIS, additional information was gathered regarding who would construct and operate key project components. These include:

- *230-kV switchyard*. Ownership and operation of the cogeneration facility's 230-kV electrical switchyard would be subject to the terms of a generation interconnection agreement between Bonneville and the Applicant. The cogeneration facility would own about 65% of the switchyard, and Bonneville would own about 35%. Bonneville's portion would be the part of the switchyard that allows the output of the plant to be routed to Bonneville's grid.

- *Industrial water supply*. Whatcom County PUD would construct and operate the proposed industrial water supply connection and piping required to the fenceline of the cogeneration facility. Any impacts on wetlands associated with this water supply enhancement would be addressed in a supplemental NEPA Environmental Assessment prepared for the Corps of Engineers during the permitting process.

- *Natural gas supply and compression station*. The Applicant would construct, own, and operate the cogeneration facility's natural gas supply connection, associated piping, and natural gas compression station to be located within the refinery boundary.

- *Intermediate voltage substation*. The refinery would construct and operate the intermediate voltage (230-kV to 12.5-kV) substation to be located within the refinery boundary.

Additional facility design and related descriptive information are required for some project systems and components. These include:

- *Refinery interface piping systems*. Design characteristics for a number of piping systems that interconnect the cogeneration facility with the refinery have not yet been determined. Information regarding the size, type, route, and refinery tie-in point for the following piping systems would be determined at later stages of facility design and review if the project is approved:
  - steam and condensate systems,
  - potable water supply,
  - natural gas supply,
  - industrial water supply,
  - industrial wastewater,
  - sanitary wastewater, and
  - steam and condensate pipelines, and perhaps other lines, would be carried on an elevated piperack across the utility corridor between the cogeneration facility and the refinery.

- *Custer-Intalco Transmission Line No. 2*. At this time, although general information concerning reconstruction of the Custer-Intalco Transmission Line No. 2 is available, specific design details remain to be resolved by the Applicant and Bonneville. The following summarizes information about the reconstruction and remaining uncertainties:
  - A total of 24 existing transmission line structures would be replaced during reconstruction. Approximately the same number would be needed using the monopole design (Option 2b) and slightly fewer would be needed using the lattice steel design (Option 2a). Towers for the rebuilt line would use sites at or near sites of existing towers where feasible. However, the exact number, type, and location of transmission towers that would be installed are not yet certain.

  - Existing transmission line access roads are present along the Cuter-Intalco Transmission Line No. 2 and would be used where feasible. However, whether and where roads may need improvements and whether any additional roads need to be constructed are not yet certain.
  - The need for new culverts, their size, and location are not yet certain.
- One or two temporary laydown, staging, and assembly areas would likely be required along the transmission line corridor for construction material storage and tower preparation. These areas are typically less than 2 acres in size and are usually located in existing disturbed areas such as vacant lots. However, the exact size and precise location of these areas are not yet certain.

As more specific design aspects are resolved, Bonneville would review these aspects to ensure that the environmental analysis contained in this Final EIS remains valid for describing potential impacts associated with the transmission line reconstruction and, if necessary, would prepare additional environmental documentation to ensure that all impacts are adequately considered.

1.6.9 Additional Studies/Evaluations Required to Complete the Environmental Review of the Proposed Project

404 (B) (1) Alternative Analysis. The Corps of Engineers had asked the Applicant to revise and provide more details regarding the evaluation of project alternatives. A revised 404 (B) (1) Alternatives Analysis has been completed and is included as Appendix A of this Final EIS. The Corps has indicated this document is adequate for this EIS, but additional analysis will be necessary for the Clean Water Act Section 404 permit.

1.7 SUMMARY OF POTENTIAL IMPACTS AND MITIGATION MEASURES

Table 1-2 summarizes potential impacts resulting from construction and operation of the Proposed Action Alternative and the No Action Alternative. Also included in the table are proposed mitigation measures. The Applicant, during the preliminary design of the proposed project, has mitigated potentially significant adverse impacts such that, with the exception of the permanent loss of approximately 31 acres of wetlands, no significant adverse impact on natural resources and the built environment has been identified in the environmental review. Specific impacts and mitigation measures are discussed in each section of Chapter 3 of the Draft EIS and are updated as needed in Chapter 3 of this Final EIS.

1.8 CUMULATIVE IMPACTS

The Pacific Northwest has short-term and long-term supply needs for electrical power. The WECC forecasts electricity demand in the western United States. According to WECC's most recent coordination plan, the 2001-2011 summer peak demand requirement is forecasted to increase at a compound rate of 2.5% per year (WECC 2002).

The NWPCC regularly prepares a 20-year forecast of electricity demand in the Pacific Northwest. NWPCC's latest long-term forecast found that the total consumption of electricity is

forecasted to grow from 20,080 average megawatts in 2000 to 25,423 average megawatts by 2025, an average yearly rate of growth of just under 1% (NWPCC 2003).

In addition to evaluating the environmental impacts of proposed power projects on an individual basis, EFSEC and Bonneville have also considered potential cumulative impacts of these projects, as well as other projects and actions that could contribute to cumulative impacts. This concern of the state and federal agencies is magnified when several projects are proposed at the time in the same vicinity with schedules that overlap.

The following is a summary of the cumulative impact evaluation included in this EIS.

1.8.1 Global Warming

Most greenhouse gas emissions that would result from the construction and operation of this project would be in the form of carbon dioxide (CO_2), with a smaller fraction of methane or nitrous oxide. The contribution of greenhouse gas from this project would represent 2.5% of the greenhouse gas emitted from all sources in Washington State and 0.03% of U.S. emissions. Although it is possible to predict global warming effects in the Pacific Northwest due to overall increases in greenhouse gas concentrations in the atmosphere, it is not possible to determine the specific impact on a regional or global scale resulting from the BP Cherry Point Cogeneration Project greenhouse gas emissions alone. Regional economic growth and the subsequent increases in greenhouse gas emissions, including those from additional gas-fired generation, would also add to the cumulative impacts.

1.8.2 Regional Air Quality

The results of modeling under the worst-case scenario for criteria pollutants from the proposed project indicate there would be no air quality impacts in the US or Canada when compared to the most stringent values of the National Ambient Air Quality Standards, Washington Ambient Air Quality Standards, or Canadian Objectives or Standards. The Applicant has committed to shut down three older utility boilers, resulting in overall reductions of PM_{10} and NO_x emissions in the airshed. Construction of the Georgia Strait Pipeline along Grandview Road at approximately the same time as construction of the proposed project would only temporarily affect air quality through the emission of fugitive dust.

1.8.3 Water

With the construction of the proposed project and the Georgia Strait Pipeline project scheduled at around the same time, there is a possibility of cumulative impacts. These impacts could potentially result from the use of water to control dust, pipeline testing and cleaning, and hydrotesting major pipelines.

Other known or proposed projects in the Terrell Creek watershed include the GSX pipeline, the BP ISOM unit, and the Brown Road Materials Storage Area. The GSX pipeline traverses about 5 miles of Terrell Creek watershed. While some wetlands would be excavated, they would be reestablished after construction to restore their hydrologic character. The pump station would be

on a 5-acre site, but none of that would be wetland. The ISOM unit would be constructed on existing impervious surface at the refinery where stormwater treatment and detention are already provided. The Brown Road Materials Storage Area would eliminate about 11 acres of wetlands that provide surface water storage but would include 34 acres of wetland mitigation to replace that function. With the cogeneration project, there would be 30.5 acres of wetlands lost and 110.1 acres of wetland mitigation. Cumulatively, there would be some incremental loss of wetland surface water storage in the watershed, but that would be offset by onsite treatment and detention, and offsite mitigation in the basin.

With the shutdown of the Alcoa Intalco Works, water used at that facility would now be used by the proposed project, so there would be no net increase of water consumption when the proposed project becomes operational. If Alcoa Intalco Works operates at the same time as the cogeneration facility, there still would be no cumulative impacts because the once-through cooling water from Alcoa Intalco Works would be used by the cogeneration facility, thereby precluding the need for additional withdrawal of water from the Nooksack River.

Several industrial dischargers are located in the general vicinity of the proposed cogeneration project. These include the BP Cherry Point Refinery, the Conoco-Phillips Refinery, Tenaska Washington Cogeneration Power Plant, and Alcoa Intalco Works. All of these facilities currently discharge to the Strait of Georgia. Also, the Birch Bay Sewer District Treatment Plant discharges to Birch Bay, an embayment of the Strait of Georgia. Although discharge from the proposed project would represent a relatively small increase to the regional discharge to the Strait of Georgia, it adds to the overall burden on water quality.

1.8.4 Natural Gas Supply

The projected annual consumption of natural gas by the proposed project is approximately 42,457,000 million British thermal units (MBtu). The proposed project would result in an incremental contribution to the regional demand for natural gas. However, there is sufficient capacity in the gas supply and distribution system serving the Pacific Northwest to supply the proposed cogeneration project and existing and planned natural-gas-related projects such that the overall effect on available supplies would be negligible.

1.8.5 Transmission Lines

Construction of the cogeneration facility's transmission line and the possible reconstruction of the Custer-Intalco Transmission Line No. 2 would not have a cumulative impact on the natural resources within western Whatcom County. The short 0.8-mile cogeneration transmission line would connect the project to Bonneville's existing transmission system. The Bonneville line would not need to be extended and, except for the 230-kV switchyard at the cogeneration facility, no new substations would need to be constructed as a result of the proposed project. Bonneville is continually conducting studies to determine the need to extend their transmission system.

1.8.6 Transportation

Construction of the proposed project and the construction of the Georgia Strait Pipeline project would occur at about the same time. It is expected that some increased traffic congestion and delays at intersections along Grandview Road would occur over the two-year period. Based on traffic modeling completed for the proposed project, the results indicate that the level-of-service at all major regional intersections would operate at acceptable levels as defined by Washington State Department of Transportation design standards.

1.8.7 Population, Housing, and Economics

A workforce analysis conducted by the Applicant suggests that there is an adequate labor pool available for construction of the proposed project. If additional projects, such as the Georgia Strait Pipeline project, were to be constructed within the region, some workers likely would relocate to the area, temporarily affecting the local housing market, population, and local services. This potential future condition is not expected to be a significant cumulative impact on communities in the project vicinity.

Table 1-2: Summary of Impacts and Mitigation Measures

Element of the Environment	Impacts of the Proposal	Impacts of No Action	Measures to Mitigate Impacts
Earth			
Construction	• Extensive grading of the site is not anticipated to be required, however some unsuitable materials may require removal from the site for disposal at approved locations. • The total quantity of imported fill material is estimated to be approximately 126,000 cubic yards (75,600 tons). • Site grading and stockpiling activities would expose soils and would increase the potential for erosion. • The potential exists for contacting contaminated soils during excavation activities at the BP Cherry Point Refinery and at the Alcoa Intalco Works facilities because of industrial practices that have occurred at these sites since the 1970s.	• Under the No Action Alternative, the project would not be constructed, therefore there would not be any construction impacts for this element of the environment.	<u>Mitigation Proposed by the Applicant</u> • Best Management Practices (BMPs) would be implemented for erosion control and prevention. The BMPs would be described in a Stormwater Pollution Prevention (SWPP) plan and Temporary Erosion and Sedimentation Control (TESC) plan to be submitted to EFSEC prior to construction. • If soil contamination were found during site clearing, grading, and trenching, the activities would be halted until the contamination can be identified and contaminated soils handled in the appropriate manner. • Excavated materials of acceptable quality would be reused as much as possible. • Excess materials would be disposed of at permitted fill sites or would be placed where they would not easily erode. • Disturbed areas would be revegetated by seeding or hydroseeding. • Seed mixes would be selected that are known to effectively stabilize erodible soils in the northwestern portion of the State of Washington. • Soil stockpiles would be seeded or covered with an emulsion and surrounded by silt fences and straw bales or sand bags, where necessary, to prevent excessive erosion by wind or rain. • Sprinkler systems may be employed to sustain vegetation on bermed areas with high exposure to the erosive forces of wind. • Erosion control measures for construction, such as silt fencing, straw bales, and tarps, would be inspected and maintained. • A Spill Prevention Control and Countermeasure (SPCC) Plan would be prepared. The plan would include procedures to implement structural, operational, and treatment BMPs.

Table 1-2: Continued

Element of the Environment	Impacts of the Proposal	Impacts of No Action	Measures to Mitigate Impacts
			• Stormwater runoff from the construction site would be collected and routed to a sediment control system. • Sediment control measures, such as an oil-water separation system and detention ponds, would be sized for storm events ranging from 6-month, 24-hour up to the 100-year, 24-hour event.
Operation	• During operation, there would be the potential for a large seismic event to impact cogeneration facility operations (i.e., the production of electricity). • During operation, the greatest risk to the project from volcanic activity would be from tephra (ash) fall.	• Under the No Action Alternative, the project would not be constructed, therefore there would not be any operation impacts for this element of the environment.	<u>Mitigation Proposed by Applicant</u> • The characteristics of the soils would be determined during the geotechnical analysis completed during detailed project design. If the soils prove to be susceptible to induced amplification, the project design would incorporate protection measures against such seismic events.
Air Quality			
Construction	• Emissions during the construction process would consist of fugitive dust and combustion exhaust emissions from construction equipment and vehicles. It is not anticipated that these emissions would exceed the NAAQS or WAAQS.	• Under the No Action Alternative, the project would not be constructed, therefore there would not be any construction impacts for this element of the environment.	<u>Mitigation Proposed by the Applicant</u> • Roads would be covered with gravel to minimize the potential for fugitive dust emissions from vehicle traffic. • Late in construction, gravel roads would be paved to further reduce emission of fugitive dust. • Spraying exposed soil with water would reduce PM_{10} emissions and particulate matter deposition. • Planting vegetative cover as soon as appropriate after grading would reduce windblown particulate matter in the area. • Use appropriate dust control measures to minimize windblown dust from transportation of materials by truck, which may include wetting and covering. • Use appropriate measures to reduce particulate matter from wheels before entering roads, which nay include wheel washers. • Routing and scheduling construction trucks so as to reduce delays to traffic during peak travel times would reduce secondary air quality impacts caused by a reduction in traffic speeds while waiting for construction trucks.

Table 1-2: Continued

Element of the Environment	Impacts of the Proposal	Impacts of No Action	Measures to Mitigate Impacts
			• Maintain construction equipment in good working order to reduce CO and NOx emissions.
Operation	• During operation, emissions from the cogeneration facility would include SO_2, PM_{10}, $PM_{2.5}$, VOCs, CO, and NO_2, however all pollutant concentration levels would be well below National Ambient Air Quality Standards or Washington Ambient Air Quality Standards. • Emissions of toxic air pollutants would result from the combustion of natural gas in the cogeneration facility, however, modeled maximum concentrations are less than the state's Acceptable Source Impact Levels. • The cogeneration facility would provide steam to the refinery and allow existing refinery boilers to be shut down, thereby providing an offsetting air quality benefit. • Cogeneration emissions are projected to contribute to a decrease in visibility at the Olympic National Park. • Fogging from the cooling tower vapor plume may occur for 650 to 1,650 feet for a total of 2.5 hours a year in the northeast or northwest directions from the tower.	• Under the No Action Alternative, the project would not be constructed, therefore there would not be any operation impacts for this element of the environment. Existing less efficient refinery boilers would continue to be operated. Less efficient fossil fuel combustion technologies, which may be added to fill long term regional power needs, would likely produce more air emissions per KW-hr produced.	<u>Mitigation Proposed by the Applicant</u> • Only natural gas would be burned in the combustion turbines and duct burners, and only low-sulfur diesel fuel in the emergency generator and firewater pump. • BACT would be used at the cogeneration facility. BACT to control criteria pollutant emissions include: - Dry low NO_x combustion technology; - Selective catalytic reduction technology; - Oxidation catalyst controls incorporated into the HRSGs to reduce CO emissions and VOCs. • BACT to control toxic emissions include: - Use of clean natural gas as the only fuel for the combustion gas turbines and HRSG duct burners; and - Use of oxidation catalyst unit on each HRSG duct burner. • As long as the Applicant owns the cogeneration facility, mitigation of greenhouse gases (GHG) would be offset by GHG reduction within BP West Coast Products, LLC worldwide operations. • If the ownership of the cogeneration facility is transferred to another party, then mitigation of GHG emissions would be provided by: - The proposed CO_2 emission standard would be 0.675 lbs. CO_2/kWh, - Emissions in excess of the emission standard would be mitigated either by (a) an annual payment of \$0.85/ton CO_2, or (b) GHG reductions obtained by the new owner, or (c) a combination of both. - Mitigation would be satisfied annually for 30 years.

Table 1-2: Continued

Element of the Environment	Impacts of the Proposal	Impacts of No Action	Measures to Mitigate Impacts
			- If BP retains partial equity in the facility, it would continue to offset the associated portion of GHG emissions from the project. - Startup and shutdown procedures would be followed as developed by manufacturers and documented in the Applicant's Startup, Shutdown and Malfunction Procedures Manual. - Existing refinery boilers would be removed within six months of commercial operation.
Water Resources			

Construction	• Water from various sources would be used to support construction, including:
	  • Approximately 7 million gallons of trucked water from the refinery would be used for dust control; and
	  • Approximately 21.5 million gallons of fresh water from the public utility district would be used for steam blow testing and hydrostatic testing.
	• Stormwater flow would be altered to control erosion and sedimentation during construction
	• Groundwater recharge would be reduced under the project site during construction, but would increase in the wetlands north of Grandview Road.
		• Under the No Action Alternative, the project including proposed wetland mitigation areas would not be constructed. Therefore, there would not be any construction impacts for this element of the environment.	<u>Mitigation Proposed by the Applicant</u>
			• Stormwater would be collected, treated, and discharged off-site within the same drainage basin allowing groundwater recharge in the same hydrological system.
			• A Stormwater Pollution Prevention (SWPP) plan would be developed prior to construction, the SWPP plan would include Temporary Erosion and Sedimentation Control (TESC) plans.
			• The SWPP and TESC would specify Best Management Practices for erosion control during construction. All erosion control BMPs would be in place and functioning prior to construction.
			• Stormwater runoff from project site roads and other impervious areas would be collected in an oil-water separator to draw off any trace oil and then route the stormwater to a detention pond to allow sediment to settle out.
			• Stormwater collected from the construction site would be routed to an unlined surface detention pond and allowed to infiltrate or discharge to wetlands within the same hydrologic basin. The net effect would be returning the collected stormwater to the same hydrologic system for recharge.
			• Stormwater runoff from around the site would be continue to be routed to existing ditch along the Blaine Road and then discharged to Terrell Creek.

Table 1-2: Continued

Element of the Environment	Impacts of the Proposal	Impacts of No Action	Measures to Mitigate Impacts
			• Diversion ditches would prevent surface water runoff from areas outside the cogeneration site from entering the site. • The Applicant would not construct a perimeter ditch along the west side of Wetland C. • Stormwater runoff from within the cogeneration site will be contained, collected, and routed to the stormwater treatment and detention system.
Operation	• During operation, the cogeneration facility would use between 2,244 and 2,316 gpm of process water for cooling and other facility functions. The water would either be recycled cooling water from the Alcoa Intalco Works aluminum smelter if that facility is in operation, or water received directly from the PUD if the Alcoa Intalco facility is not in operation. • The cogeneration facility would use between 1 and 5 gpm of potable water supplied by the Birch Bay Water and Sewer District. • During operation, the cogeneration facility would generate industrial wastewater from: - Treatment of raw water to produce high quality boiler feedwater (BFW) and refinery return condensate treatment; - Collection of water and/or other minor drainage from various types of equipment; - Cooling tower blowdown; and - Sanitary waste collection. • Runoff from surfaces containing contaminants could impact surface and groundwater. • Groundwater recharge impacts would be the same as for construction.	• Under the No Action Alternative, the project including proposed wetland mitigation areas would not be constructed, therefore there would not be any operation impacts for this element of the environment.	<u>Mitigation Proposed by the Applicant</u> • Wastewater would not discharge directly into any watercourses (including creeks, lakes, wetlands, ditches, or the marine environment), or storm drains, nor will it require any new outfalls. • Stormwater runoff quantities would be controlled by the stormwater collection and treatment system. • Stormwater collected from the cogeneration site would be routed to an unlined surface detention pond and allowed to infiltrate or discharge to wetlands within the same hydrologic basin. The net effect would be returning the collected stormwater to the same hydrologic system for recharge. • The SWPP plan for operation would include structural and operational BMPs, a Spill Prevention, Control and Countermeasure (SPCC) plan, a final stormwater management plan, and general operating procedures. • Industrial wastewater would be treated in the refinery's wastewater treatment system prior to discharge to the Strait of Georgia.

Table 1-2: Continued

Element of the Environment	Impacts of the Proposal	Impacts of No Action	Measures to Mitigate Impacts
	• During operation of the project, surface water from the cogeneration facility would be discharged to the CMA 2 site, increasing flows to the site. Increased flows the site, combined with topological modifications proposed for the site, is expected to increase hydraulic residence time on the site, thus enhancing existing wetlands and restoring wetlands that have been effectively drained.		• Sanitary wastewater would be routed to the Birch Bay Sewer District's wastewater treatment plant for treatment and discharge to the Strait of Georgia.
Water Quality			
Construction	• Wastewater containing contaminants would be generated during plant construction and pre-operation testing. • During construction of the project, potential water quality impacts could be caused by: - Sediment-laden stormwater discharged from the project site during construction; and - Spills and leaks of chemicals, especially a large volume spill, during construction could impact stormwater, surface water (wetlands), and groundwater. • Water used for HRSG steam-blow tests would be discharged as steam to the atmosphere. If contaminants are present in the water, the contaminants may be discharged to the atmosphere with the steam. • Runoff from surfaces containing contaminants could impact surface and groundwater. • Sanitary waste generation is anticipated to be 500 gallons per day during construction of the project.	• Under the No Action Alternative, the project would not be constructed; therefore there would not be any construction impacts for this element of the environment.	<u>Mitigation Proposed by the Applicant</u> • Hydrostatic test water would be discharged to the refinery's wastewater treatment system and then discharged to the Strait of Georgia. If hydrostatic test water does not meet the water discharge quality, other offsite disposal options would be necessary. • SWPP plan for construction activities would be prepared for the various elements of the project, and would include stormwater management procedures, Temporary Erosion and Sedimentation Control (TESC) plan for each phase of project, the specification of all necessary BMPs for construction activities as specified in the Stormwater Management Manual for Western Washington (Ecology 2001), and include general operation and maintenance descriptions of the BMPs used on site. • All erosion control BMPs would be in place and functioning prior to the start of construction. • To minimize the potential release or spills of chemicals during construction, best management practices, as specified in the SWPP plans, would be employed. These would include good housekeeping measures, inspections, containment facilities, minimum onsite inventory, and spill prevention practices.

Table 1-2: Continued

Element of the Environment	Impacts of the Proposal	Impacts of No Action	Measures to Mitigate Impacts
			<u>Additional Mitigation Measures</u> • If project approval is recommended, EFSEC would develop State Waste Discharge and National Pollutant Discharge Elimination System Permit conditions for construction of the cogeneration facility. The permit would specify construction stormwater effluent limits and monitoring requirements intended to reduce or eliminate water quality impacts. Monitoring of stormwater would commence at the beginning of construction.
Operation	• Spills and leaks of chemicals, especially a large volume spill, during operation could affect stormwater, surface water (wetlands), and groundwater. • The cogeneration facility would produce 190 gpm on average (assuming 15 cycles of concentration in the cooling tower) of non-recyclable process wastewater which would be sent to the BP refinery's wastewater treatment system. • Between 1 and 5 gpm of sanitary waste would be generated by the cogeneration facility. • Periodic washing of the gas turbines would generate up to approximately 2,300 gallons of wash water per turbine per quarter. The wash water would likely contain dirt deposits removed from the blades, along with detergents used for the cleaning operation. • Operation and maintenance of the industrial water supply pipeline and associated components at the Alcoa Intalco Works could result in potential erosion/sedimentation and chemical spills that could impact surface water and groundwater quality.	• Under the No Action Alternative, the project would not be constructed; therefore there would not be any operation impacts for this element of the environment.	<u>Mitigation Proposed by the Applicant</u> • SWPP plan for operational activities would be prepared for the cogeneration facility, and would include stormwater management procedures. The SWPP plan for operation would include structural and operational BMPs; a SPCC plan; and a final stormwater management plan. • Prior to operation of the cogeneration facility, a SPCC plan would be prepared the plan would contain procedures for spill response, containment, and prevention procedures; and structural, operational, and treatment BMPs. • Safeguards incorporated to mitigate the risks of a release to the environment from stored operational chemicals include secondary containment, tank overfill protection, routine maintenance, safe handling practices, supervision of all loading/unloading by plant personnel and truck drivers, and appropriate training of operation and maintenance staff. • Industrial wastewater from the cogeneration facility would be treated in the refinery's wastewater treatment system prior to discharge to the Strait of Georgia. • Sanitary wastewater would be routed to the Birch Bay wastewater treatment plant for treatment and discharge to the Strait of Georgia.

Table 1-2: Continued

Element of the Environment	Impacts of the Proposal	Impacts of No Action	Measures to Mitigate Impacts
			Additional Mitigation Measures • If project approval is recommended, EFSEC would develop State Waste Discharge and National Pollutant Discharge Elimination System Permit conditions for operation of the Cogeneration Facility. Permit conditions would include discharge limitations, monitoring requirements, reporting and record keeping requirements, operation and maintenance plan for water quality treatment facilities, development of SPCC and hazardous waste management plans, and SWPP plan.
Wetlands			
Construction	• Construction of the project would disturb 35.52 acres of existing wetland areas, including 30.66 acres that would be permanently disturbed and 4.86 acres that would be temporarily disturbed. Affected wetlands would be located at the cogeneration facility site (Wetlands A, B1, B2, B3, C, and D), the refinery interface (Wetlands F, G, J, and H), and the transmission system. • Reduced wetland functions would include floodwater detention and retention, flood flow desynchronization, groundwater recharge and discharge, and water quality improvement.	• Under the No Action Alternative, the project including proposed wetland mitigation, would not be constructed. Therefore no construction impacts or wetland enhancement would occur.	Mitigation Proposed by the Applicant • Mitigation measures consistent with those generally required by the Corps and Ecology for Category III wetlands within Western Washington would be implemented during construction to protect wetlands that would not be filled. Wetlands not disturbed would be protected using silt fencing and haybales. Wetlands temporarily disturbed and would be restored after the project construction is completed. • To compensate permanently disturbed wetlands the Applicant has designed a compensatory mitigation plan in consultation with state, and federal agencies. The proposed plan outlines the enhancement of 110 acres north of Grandview Road. • To minimize and control the spread of noxious weed species, all equipment would be cleaned before leaving the site.

Table 1-2: Continued

Element of the Environment	Impacts of the Proposal	Impacts of No Action	Measures to Mitigate Impacts
Operation	• Other than those communities affected by construction, operation of the project would not affect existing wetland systems.	• Under the No Action Alternative, the project would not be constructed, therefore there would not be any impacts for this element of the environment. The proposed wetland enhancement and the creation of new wetlands would not occur.	<u>Mitigation Proposed by the Applicant</u> • A 10-year monitoring plan would be implemented to measure mitigation success.
Agricultural Land, Crops, and Livestock			
Construction	• The proposed project elements would result in the development or modification of land that Whatcom County has identified as Category I and II prime farmland soils and mapped as APO soils and Agricultural Open Space. • Reconstruction of Custer/ Intalco Transmission Line No. 2 would likely result in the conversion of some prime farmland to utility uses within the existing Bonneville Transmission Corridor. • Construction of the cogeneration facility, Access Road 1, and Laydown Areas 2 and 4 would result in a direct and permanent loss of approximately 2.6 acres of existing hybrid black cottonwood. • The proposed compensatory wetland mitigation plan would preclude the continued use of mitigation area CMA 1 for cattle grazing.	• Under the No Action Alternative, the project would not be constructed, therefore there would not be any impacts for this element of the construction environment.	<u>Mitigation Proposed by the Applicant</u> • No mitigation measures for agricultural land, crops, and livestock are proposed.
Operation	• Emissions from the cogeneration facility are expected to have a negligible effect on agricultural crops and livestock.	• Under the No Action Alternative, the project would not be constructed, therefore there would not be any impacts for this element of the operation environment.	• No operational mitigation measures for agricultural land, crops, and livestock are proposed.

Table 1-2: Continued

Element of the Environment	Impacts of the Proposal	Impacts of No Action	Measures to Mitigate Impacts
Upland Vegetation, Wildlife and Habitat, Fisheries, and Threatened and Endangered Species			
Construction	• Construction of the project would disturb up to 33.53 acres of existing upland vegetation, including: including grassland, shrubland, mixed coniferous/deciduous forest, coniferous forest, and deciduous forest. While adding a transmission line from Brown Road to Custer Substation would involve rebuilding an existing line in a right-of-way already cleared of tall-growing vegetation, some additional removal of individual trees potentially interfering with the rebuilt line may need to be removed in limited wooded areas for a total of about one mile along the five-mile long corridor. • The primary effect from project construction would be removal and loss of habitat. Grassland and wetland communities are the primary habitats that would be cleared under the proposed alternative. Other habitats that would be cleared include shrubland, mixed coniferous/deciduous forest, coniferous forest, and deciduous forest. • Disturbances caused by construction on the site may affect wildlife in adjacent habitats by disrupting feeding and nesting activities. Increased noise levels created by heavy machinery could cause birds to abandon their nests and may temporarily displace wildlife during construction. • Proposed wetland enhancement and the creation of new wetlands associated with proposed wetland mitigation sites CMA 1 and CMA 2 would result in an increase in habitat quality, would benefit wildlife species that currently use the area, and would likely attract a more diverse assortment of wildlife species.	• Under the No Action Alternative, new facilities would not be constructed at the site, and impacts on upland vegetation, wildlife and habitat, fisheries, and threatened and endangered species associated with the proposed project would not occur. No impacts or construction would occur that would entail removal or alteration of existing habitat within the proposed project site. • The proposed wetland enhancement and the creation of new wetlands associated with proposed wetland mitigation sites CMA 1 and CMA 2 would not occur.	<u>Mitigation Proposed by the Applicant</u> • BMPs would be implemented to protect upland vegetation communities within the proposed project site that are not disturbed during construction. • Native vegetation, including seed mixes with native grasses, would be used to replace vegetation, particularly areas infested by weedy species. • A landscaping plan would be prepared and implemented that includes long-term weed control measures. • Plant native trees and shrubs parallel to the south side of Grandview Road, north of the cogeneration facility site and north of the laydown areas, to the west of Blaine Road. • Development of the stormwater control system would maintain water quality and fishery resources in Terrell Creek • Development and implementation of the SWPP plan would also protect water quality and fishery resources. • Mitigation requirements as conditions of permits or government approvals would be implemented. • Construction Laydown Area 4 would be restored following construction. • The Applicant would restore, rehabilitate and enhance wetlands north of Grandview Road, identified as mitigation sites CMA 1 and CMA 2. • In accordance with the Settlement Agreement between the Applicant and Whatcom County regarding the protection of herons, earthwork activity to create the wetland mitigation sites CMA 1 and CMA 2 has been scheduled for the dry season, which coincides with the end of the fledging period, and most plantings would occur in the fall and winter when the herons are dispersed.

Table 1-2: Continued

Element of the Environment	Impacts of the Proposal	Impacts of No Action	Measures to Mitigate Impacts
Operation	• Some areas currently dominated by noxious weed species may be converted to landscaped areas that would require maintenance. The establishment of noxious weed species may occur within the proposed plant site. • Operation and maintenance associated with the transmission corridors would include removing or topping trees to maintain a safe distance between trees and electrical lines. • Existing access and maintenance roads associated with transmission corridors would be maintained to prevent vegetation from growing in these areas. Vegetation that becomes established in disturbed areas such as unpaved roads are often nonnative invasive species. • Some wildlife habitat loss, noise, and disturbance could occur during maintenance activities within the transmission corridors. • Maintenance and operation activities associated with the transmission corridors could result in chemical spills that potentially could impact fish habitat.	• Under the No Action Alternative, the project would not be constructed, therefore there would not be any impacts for this element of the environment.	• Implement noxious weed control program pursuant to wetlands mitigation requirements, and maintain landscaped areas to prevent spread of noxious weeds. • The primary mitigation measure applicable to the proposed project is to use best engineering practices and construct the transmission towers at the minimal height allowable with no guy wires or lighting to avoid impacts on birds. The transmission lines and tower design would be defined by the Bonneville interconnection agreement. • See also Air Quality, Water Resources, and Water Quality. • The Applicant plans to maintain at least 23 acres of the wetland mitigation site (CMA 2) in open field habitat. In addition, wetland mitigation design includes improving the quality of heron habitat for heron foraging, maintaining connectivity to other existing forage areas, and enhancing areas to promote amphibian breeding habitats.
Energy and Natural Resources			
Construction	• Construction of the cogeneration facility would consume non-renewable resources, including: - 126,000 cubic yards of imported fill - 7,500 cubic yards of sand - 18,150 cubic yards of gravel - 25,200 cubic yards of concrete - 1,050 tons of steel • Construction of the cogeneration facility would consume electrical energy for lighting and heating in construction offices, temporary lighting at the facility, and powering various pieces of construction equipment. The estimated peak electrical demand during construction is approximately 2.5 MVA at 480 V. • Construction of the cogeneration facility would consume approximately 592,000 gallons of petroleum products, including diesel fuel and gasoline.	• Under the No Action Alternative, the cogeneration facility would not be constructed and the consumption of energy or natural resources associated with construction of the project would not occur.	<u>Mitigation Proposed by the Applicant</u> • Conservation of energy and natural resources during construction would take place through the use of industry standard BMPs. These may include the use of energy-efficient lighting, lighting of only critical areas during non-working hours, encouraging car-pooling, efficient scheduling of construction crews, minimizing idling of construction equipment, recycling of used motor oils and hydraulic fluids, and implementation of signage to remind construction workers to conserve energy and other resources.

Table 1-2: Continued

Element of the Environment	Impacts of the Proposal	Impacts of No Action	Measures to Mitigate Impacts
Operation	• During operation, the cogeneration facility would consume approximately 42.5 million MBtu of natural gas per year. • The proposed project may exceed the transmission capacity of the Ferndale Pipeline during periods of peak demand. The Applicant estimates that up to approximately 40,000 decatherms per day of additional capacity of may be needed. • Operation of the cogeneration facility would consume petroleum products, primarily lubricants associated with the operation of equipment and gas and diesel fuel for vehicles around the facility • The cogeneration facility would use various chemicals during operation to facilitate desired chemical reactions, control water quality, and for other facility operational purposes. • Transmission line maintenance would require relatively small quantities of fuel for vehicles and helicopters engaged in transmission line surveillance and monitoring, and electricity to maintain and operate equipment at Custer Substation. Transmission corridor road maintenance would require the use of crushed rock, gravel, and sand during the life of the project on an as-needed basis. Periodic replacement of conductor wires, ground wires, fiber optic cables, insulators, and structural elements may be required over time. • Generate a nominal 720 MW of electricity, of which, approximately 85 MW would be used by the BP Cherry Point Refinery, 21 MW would be used by the natural gas compression station and other cogeneration facility auxiliary systems, and 635 MW would be exported to the Northwest power grid for use by other customers. • Supply approximately 4,200 million pounds (MMlb) of steam per year to the refinery.	• Under the No Action Alternative, the project would not be constructed; therefore there would not be any construction impacts for this element of the environment. • Under the No Action Alternative, the Applicant would likely continue to meet the electrical power needs of the refinery with a combination of onsite electrical power generation and purchasing electrical power from other sources. The existing refinery boiler system would continue to be used to meet the refinery's steam demand. Under this alternative, the cogeneration facility would not generate and transmit electrical power for use on the Northwest power grid.	<u>Mitigation Proposed by the Applicant</u> • Boiler blowdown water would be routed to the cooling tower as make up water to reduce fresh water consumption. • Existing utility boilers would be taken out of service and replaced with more efficient cogeneration steam generation cycle, reducing the use of natural gas resources. • Construction activities would be coordinated with energy and natural resource providers to ensure that other users in the area would not experience any service interruptions.

Table 1-2: Continued

Element of the Environment	Impacts of the Proposal	Impacts of No Action	Measures to Mitigate Impacts
Noise			
Construction	• Noise produced during construction would vary depending on the construction phase underway. Maximum noise levels from most construction equipment could range from 69 to 106 decibels or dB(A) at 50 feet. • In addition to noise produced from onsite construction equipment, traffic volumes would increase as construction employees commute to and from work at the site. Additional transient noise would occur as a result of increased volumes of delivery and service vehicles (including trucks of various sizes) doing business at the site.	• Under the No Action Alternative, the project would not be constructed, therefore there would not be any construction or traffic noise impacts.	<u>Mitigation Proposed by Applicant</u> • To reduce construction noise, the construction industry's management practices would be incorporated into construction plans and contractor specifications. • Limiting noisier construction activities to the hours of 7 a.m. and 10 p.m. would reduce construction noise during sensitive nighttime hours. • Construction equipment would be equipped with adequate mufflers, intake silencers, or engine enclosures. • Turn off construction equipment during prolonged periods of nonuse. • Require contractors to maintain all equipment. • Locate stationary equipment away from receiving properties.
Operation	• Modeling results indicate that none of the receivers would experience a perceptible increase (above 3 dBA) in noise during the daytime or evening.	• Under the No Action Alternative, the project would not be constructed, therefore there would not be any operational or equipment impacts.	<u>Mitigation Measures Proposed by the Applicant</u> • The cogeneration placement and design of the facility has integrated noise mitigation measures for sound reduction. • Stack silencers would be incorporated into the design of the HRSG. • The three gas turbine generators and the steam turbine generator will be housed within enclosures. • Operation of the cogeneration facility would comply with regulations governing noise from industrial facilities (WAC 173-60). • In accordance with the Settlement Agreement with Whatcom County, the Applicant would limit noise-generating activities such that noise levels at five regional receptors would not exceed existing levels.

Table 1-2: Continued

Element of the Environment	Impacts of the Proposal	Impacts of No Action	Measures to Mitigate Impacts
			• Within 180 days of the beginning of operation, the Applicant would conduct post-operation noise monitoring at the five receptors to determine compliance with the noise limitations.
Land Use			
Construction	• Construction of all project elements would entail the conversion of approximately 195 acres of land from predominantly undeveloped, vacant land to developed industrial uses. This acreage includes 110 acres of undeveloped and agricultural land north of Grandview Road that would be permanently altered to provide for wetland mitigation.	• Under the No Action Alternative, the project would not be constructed, therefore there would not be any construction impacts for this element of the environment.	<u>Mitigation Measures Proposed by the Applicant</u> • No mitigation measures related to land use are proposed.
Operation	• Construction and operation of the project would be consistent with Whatcom County Land Use Plans and generally consistent with the Whatcom County zoning code. The two transmission line elements would require County approval of conditional use and substantial development permits.	• Under the No Action Alternative, the project would not be constructed, therefore there would not be any impacts for this element of the environment.	<u>Mitigation Measures Proposed by the Applicant</u> • No mitigation measures related to land use are proposed.
Visual Resources, Light, and Glare			
Construction	• Visual impacts resulting from construction are expected to be low to moderate. Construction activities would be visible from Grandview Road, and farm buildings and residences located along Kickerville Road near the transmission system interconnection with Custer-Intalco Transmission Line No. 2. Clearing of the new transmission corridor and installation of transmission towers could be viewed temporarily while the transmission lines are under construction.	• Under the No Action Alternative, the proposed project would not be constructed and existing views of the project site would be maintained. Views to the site could be altered when the hybrid poplar trees are harvested. Because the land is zoned for industrial uses, future industrial development on the project site would be likely to occur.	<u>Mitigation Measures Proposed by the Applicant</u> • A Site Management Plan would be prepared and implemented to minimize overall visual impacts of construction activities.

Table 1-2: Continued

Element of the Environment	Impacts of the Proposal	Impacts of No Action	Measures to Mitigate Impacts
Operation	• Once constructed, the project is expected to introduce low to moderate visual impacts in the immediate vicinity of the project site, depending on the viewer type and viewing distance. • There would be an occasional visible water droplet plume related to the operation of the cooling tower at the cogeneration facility. The visibility of the plume would depend on the ambient temperature and relative humidity. • From the intersection of Blaine and Grandview roads, the proposed cogeneration facility would be moderately visible due to its close proximity to the road. • Under Option 1, there would be no visual impacts associated with the Custer Intalco Transmission Line No. 2. Under Option 2a, the use of larger steel lattice towers may result in a slight increase in effects over the existing towers near residences because of their greater height. Under Option 2b, the closer spacing of the steel monopole towers may reduce the visual effects of individual towers, but the decreased spacing would result in more towers and may offer a slightly greater interruption of views.	• Under the No Action Alternative, the project would not be constructed, therefore there would not be any impacts for this element of the environment.	<u>Mitigation Proposed by the Applicant</u> • Project elements would be painted gray. This color is intended to reduce surface glare from direct sunlight. • The cogeneration facility located approximately 340 feet south of the centerline of Grandview Road, creating an opportunity to plant screening trees and shrubs. • Project site lighting would be designed to minimize light spillover and glare.
Population, Housing, and Economics			
Construction	• During construction monthly employment on site would average 372 people, with peak employment of 706 individuals. • The indirect workforce associated with the construction stage of the project would be approximately 210 people • Including relocated employees from indirect labor, relocation could be as high as 180 workers • Tax revenue from construction of the project would accrue to Whatcom County and Washington State, from the following sources: - sales/use tax on equipment: $22.8 million. - sales/use tax on construction services and materials: $4.9 million.	• Under the No Action Alternative, the cogeneration facility would not be constructed. No additional employment or tax revenues would be created, and no workers would relocate to the project area.	<u>Mitigation Measures Proposed by the Applicant</u> • No mitigation measures are proposed.

Table 1-2: Continued

Element of the Environment	Impacts of the Proposal	Impacts of No Action	Measures to Mitigate Impacts
Operation	• Operation of the cogeneration facility would create approximately 30 full time jobs, and approximately $200,000 per year worth of temporary positions. • Operation of the cogeneration facility would generate Washington State brokerage tax revenues of between $4.5 and $5.3 million annually. • Operation of the facility would generate approximately $6 million in property tax revenues annually • During operation, the cogeneration facility would also pay business and occupation (B&O) and public utility tax to the state of Washington. The total tax paid would likely be on the order of several million dollars per year.	• Under the No Action Alternative, the project would not be constructed; therefore there would not be any impacts for this element of the environment.	Mitigation Measures Proposed by the Applicant • No operational mitigation measures are proposed.
Public Services and Utilities			
Construction	• Construction traffic associated with the project could affect the use of recreational facilities near the project site. Such effects however would be relatively short term, and would not be likely to significantly affect the public's ability to use these facilities. • It is possible that families choosing to reside within the boundaries of the Blaine School District could add a relatively small number of students to that district's enrollment, which is currently at capacity, however individual family decisions regarding where to reside would determine which schools students in those families would be eligible to attend.	• Under the No Action Alternative, the project would not be constructed, therefore there would not be any construction impacts for this element of the environment.	Mitigation Measures Proposed by the Applicant • The Applicant would develop response protocols with the Jurisdiction Having Authority, Fire District #7, to ensure that additional support and resources are available from the district and other fire jurisdictions through the District Mutual Aid Agreements.
Operation	• Operation of the cogeneration facility is projected to create 30 new jobs. It is possible that some families who choose to relocate and reside within the boundaries of the Blaine School District could add a relatively small number of students to that district's enrollment, which is currently at capacity.	• Under the No Action Alternative, the project would not be constructed, therefore there would not be any construction impacts for this element of the environment.	Mitigation Measures Proposed by the Applicant • No mitigation is proposed.

Table 1-2: Continued

Element of the Environment	Impacts of the Proposal	Impacts of No Action	Measures to Mitigate Impacts
	• The Applicant proposes to provide its own security, emergency medical, and fire response infrastructure. It is anticipated that only in an emergency, would local community fire, police, medical services, and other government resources be called upon to help respond to an event at the facility.	• Tax revenue associated with construction and operation of the project would not be realized by the state of Washington and Whatcom County.	
Cultural Resources			
Construction	• The Lummi Indian Nation's second native plant survey has not been completed and the results of this study and its associated archaeological survey may identify important resources or sites in the various project facility areas. • One recorded archaeological site in laydown area 3 in the refinery interface area appears to be insignificant and therefore would not be adversely affected by project construction. • Archaeological surveys have not been conducted for the following project facilities, therefore impacts to cultural resources in these areas are not known: various components in the refinery interface area; BP's 0.8-mile long interconnecting transmission line; Alcoa water pipeline; Access Road 1 area; and the wetland mitigation area. • A professional survey found no cultural resources along the 5-mile-long transmission line corridor from Brown Road to Custer substation. There is a low probability that such resources would be found within this area.	• Under the No Action Alternative, the project would not be constructed; therefore there would not be any construction impacts for this element of the environment.	<u>Mitigation Measures Proposed by the Applicant</u> • Monitor construction activities would occur within 100 feet of the boundaries of the recorded archaeological site discovered in Laydown Area 3. • A pedestrian survey is planned for the wetland mitigation areas where the ground would be disked to control reed canary grass. • If archaeological resources or human burials were encountered during construction, activities that could further disturb the deposits would be directed away from the find. The Washington State Archaeologist and Lummi Indian Nation cultural resource staff would be contacted. • An archaeological survey should be conducted in areas not previously surveyed. If no significant archaeological resources are discovered, construction activities would not affect cultural resources. If significant resource were found that could be impacted by the project, it is recommended that appropriate mitigation measures be devised before construction begins.
Operation	• Operation of the project would not result in adverse impacts on cultural resources at any of the project components.	• Under the No Action Alternative, the project would not be constructed; therefore there would not be any operation impacts for this element of the environment.	<u>Mitigation Measures Proposed by the Applicant</u> • No operational mitigation measures are proposed.

Table 1-2: Continued

Element of the Environment	Impacts of the Proposal	Impacts of No Action	Measures to Mitigate Impacts
Transportation			
Construction	• Construction of the proposed project would generate 650-1200 average weekday trips during the 25-month construction period. • During construction, some onsite soil would be removed and disposed of at approved sites. Various quantities of fill, including sand and gravel, would also be imported to the site. In addition, construction materials would be brought to the site that would include concrete, sheet and metal piping. Assuming trucks with a 20-cubic-yard capacity, this would result in 7,583 one-way truck trips. • The SR 548/Portal Way intersection would operate at Level of Service (LOS) F during the PM peak hour during peak construction conditions without any mitigation.	• Under the No Action Alternative, traffic volumes in the area would be expected to increase at approximately a 5% per year. Intersections on SR 548 would continue to operate at LOS B or C. The only exception is the SR 548/Portal Way intersection, which would operate at LOS D, which is considered acceptable by WSDOT.	<u>Mitigation Measures Proposed by the Applicant</u> • A Traffic Control Plan would be developed and implemented to ensure safe travel conditions within the Grandview Road and SR 548 rights-of-way. • A responsible person would be designated as the Transportation Coordinator. • The Transportation Coordinator would serve as the point of contact for county and state agencies. • Preferential parking for carpools and vanpools would be established at the site during construction, where practical. • Shift hours would be staggered or adjusted as appropriate to minimize traffic impacts. • Implement Letter of Understanding No. 66 between the Applicant and WSDOT.
Operation	• Operation of the cogeneration facility would generate approximately 140 weekday trips • The level of service at the SR 548/Portal Way intersection would decrease to LOS D, but delays would be short, and no substantial traffic queuing or congestion is expected.	• Under the No Action Alternative, the project would not be constructed; therefore there would not be any impacts for this element of the environment.	<u>Mitigation Measures Proposed by the Applicant</u> • A westbound left-turn lane would be installed on SR 548 at the Blaine Road intersection. • An access road would be located approximately 1,000 feet east of Blaine Road. The access road would be constructed and paved to meet applicable geometric and safety standards.
Health and Safety			
Construction	• Potential health and safety risks present during construction are generally typical of the risks present on major industrial/commercial construction site. Health and safety concerns include the risk of fire and explosion, chemical storage and handling, spill response, collection, storage and disposal of hazardous wastes, the installation of transmission lines, sanitary waste handling, the presence of natural gas, and worker exposure to radiation.	• The Ferndale natural gas pipeline and the BP Cherry Point Refinery have been adjacent to the project site for decades. If the proposed project were not constructed, the worker and public health and safety risks related to the use, storage, collection and treatment of non-hazardous and hazardous chemicals at the refinery would still exist.	<u>Measures Proposed by Applicant</u> • Prior to construction the Applicant would require the engineering, procurement, and construction contractor to prepare an Environmental Health and Safety Program designed to reduce the potential impacts related to risks of fire and explosion, spills, hazardous or toxic materials management and handling.

Table 1-2: Continued

Element of the Environment	Impacts of the Proposal	Impacts of No Action	Measures to Mitigate Impacts
		• Under the No Action Alternative, there would be no additional health and safety risks related to the construction and operation of the proposed project.	• Individual plans to be prepared include: - Fire Prevention and Response Plan, - Medical Emergency Plan, - Spill Prevention Plan , - Hazardous Construction Material Management Plan, and - Explosion Risk Management Plan. • As appropriate, the Applicant's existing health and safety resources may augment the EPC contractor's first aid, fire response, and security personnel. • The EPC contractor would coordinate with the Refinery Fire Marshal and the Whatcom County Fire Department during construction of the proposed project.
Operation	• The potential risks present during operation, maintenance and standby of the proposed project are similar to those present during construction. Types of accidents that could occur that would pose a health and safety risk to individuals at the cogeneration facility, the BP refinery, or in the project vicinity include: the release of anhydrous ammonia, a natural gas explosion or fire, and the release/spill of a hazardous chemical(s).	• The Ferndale pipeline and the BP Cherry Point Refinery have been adjacent to the project site for decades. If the proposed project were not constructed, the worker and public health and safety risks related to the use, storage, collection and treatment of non-hazardous and hazardous chemicals at the refinery would still exist. Under the No Action Alternative, there would be no additional health and safety risks related to the construction and operation of the proposed project.	<u>Mitigation Measures Proposed by Applicant</u> • Plans, procedures, and protocols for managing worker and public health and safety would be developed. These may include: - Safety and Health Manual - Emergency Preparedness Response Plan, and - Fire Emergency Response Operations (FERO) Plan • In addition to the plans, procedures, and protocols listed above, the following plan would be prepared to protect worker and public health and safety during the operation of the proposed project: - Fire Prevention and Response Plan, - Spill Prevention Plan, - Hazardous Waste Management Plan, - Prevention of Natural Gas Plan, and - Explosion Risk Management Plan